

GURU NANAK LEADS THE MODERN SCIENCE

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INTRODUCTION

Stephen Hawking is regarded as the most brilliant theoretical physicist since Einstein. He is also the most read scientist of the day. His book 'A Brief History of Time' was on the London *Sunday Times* bestseller list for over four years, longer than any book so far. During one of my travels I bought the book. First page of the book started with Bertrand Russel describing how the earth orbits around the sun and how the sun, in turn orbits around the center of a vast collection of stars called our galaxy. At the end of the lecture, a little old lady at the back of room got up and said: "What you have told us is rubbish. The world is really a flat plate supported on the back of a giant tortoise." The scientist gave a superior smile before replying, "What is the tortoise standing on?"

I was surprised. Guru Nanak (1469-1539), the first Guru of Sikhs faced this very question 500 years ago. He replied it very diligently. Similar to the tortoise story in Europe, the prevalent Indian myth was, "The earth is settled on the horns of a bull". Guru Nanak's reply too was in question form, "If the earth is settled on the horns of a bull, where does the bull stand? Or for that matter how many earths support bulls or how many bulls support earths?" (Sri Guru Granth Sahib p.3)

As I read the first page further, I found this greatest scientist of the time caught in a web of confusion. He had more questions than answers. Had he read Guru Nanak or Sri Guru Granth Sahib (SGGS), the holy scripture of the Sikhs, he would have not been confused.

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Answers to all his questions are available in SGGS. Guru Nanak propounded the truth when it was taboo. India was ruled by the invaders and speaking out universal truth would attract death punishments. Hawking mentions that Copernicus, in 1514 who proposed the idea that sun was stationary at the center and that the earth and the planets moved in circular orbits around the sun, feared being branded a heretic by the Church, hence circulated his model anonymously (Hawking: p. 4). Copernican model propagated that “fixed stars did not appear to change their positions apart from a rotation across the sky caused by the earth spinning on its axis, hence it became natural to suppose that the fixed stars were objects like our sun (Hawking: p.5). His idea was taken up a century later by Kepler and Galileo Galilee. However, just around the time Copernicus was toying with his idea, Guru Nanak had already said fearlessly, “Numberless are earths and the mountains for doing virtuous deeds and numberless over numberless Dhruvs (stars), the instruction receivers. Numberless are Indras, the moons, the suns; numberless are the universes and numberless countries” (SGGS: p.7). Some other questions raised by Hawking have been well explained by Guru Nanak as we find this in table 1.

Table1: Answers to Hawking’s questions available in Guru Nanak’s hymns

Sr	Hawking’s Queries	Explained in Guru Nanak hymns
1	Did the universe have natural boundaries? (Hawking: p.5) Whether the universe is limited in space? (Hawking: p.8)	1. The Lord’s creation is limitless. The bounds of His creation and their end are limitless. (SGGS: p.5)
2.	Were the stars static or moving? (Hawking : p.6)	2. “Lord’s fear moves the sun and the moon. They travel myriads of miles without an end.” (SGGS: p. 464)
3.	a) Has the universe existed forever or was created at finite time in the	3. With one word (bang) thou (the Lord) didst affect the world’s

<p>past? (Hawking :p.6) b) Is the universe expanding or contracting? (Hawking: p.6) c) Is the universe eternal and unchanging? (Hawking(a): p.6) What could have caused the stars to turn on in the first place? (Hawking: p.7) What was the first cause of creation of the universe? (Hawking: p.8) Did the God create the universe? (Hawking: p.9) Is it right to imagine that the God created the universe at the instant of big bang? (Hawking: p10)</p>	<p>expansion and whereby millions of rivers (of galaxies) began to flow. (SGGS: p.3) We find these answers: 1: Universe did not exist forever. 2. It was created at a finite time in the past. 3. The universe has been expanding ever since its origin 4. The universe is continuously changing and not static. 5. The stars were formed with the expansion of energy. 6. The Lord created the universe with one sound (bang!)</p>
<p>4. When was the universe created? (Hawking: p.8)</p>	<p>4. None can tell the time of creation except the Creator. (SGGS: p.3)</p>
<p>5 Whether the universe had beginning in time? (Hawking: p. 8) What did God do before He created the universe? (Hawking: p 9) Did the time start with big bang? (Hawking: p9)</p>	<p>5. For countless ages, there was utter darkness. There was no earth and sky. The Infinite Lord's will alone was pervasive. There was neither day, nor night, nor moon, nor sun. The Lord sat in profound meditation.....There was no hell, nor heaven, nor death, nor time." (SGGS: p.1035) "Time originated from sun" (SGGS: p.357) Universe thus did not have the beginning in time.</p>
<p>6 Have the Newton's theory of gravitation and Einstein's general theory of relativity and quantum mechanics provided the right answer to the beginning, existence and ending of the universe? (Hawking: p 9-12)</p>	<p>6. No. They have not. Guru Nanak has explained the beginning, existence, expansion and end of universe clearly as follows: With one word the Lord created the universe and started the expansion of the universe into</p>

	millions of rivers (of galaxies) (SGGS: p.3). He created the universe smoothly (SGGS: p.930) The existence of the universe is as per Lord's Will and will end when He so wills. (SGGS: p.1-2)
7. Why are we on earth? (Hawking: p.14)	7. We are on earth to perform according to His Will. ¹
8. Where did we come from? (Hawking: p.14)	8. We came from the True Lord and our ultimate aim is to merge wherefrom we came i.e., into the true Lord. ²

If Guru Nanak's above renderings are compared with the modern scientists, we find that they too agree with the same conclusions.

Table 2: Comparing Guru Nanak's renderings with Modern Scientists

Sr	Guru Nanak	Modern Scientists
1	Origin of universe	Origin of Universe
a)	"For countless ages, there was utter darkness. There was no earth and sky. There was neither day, nor night, nor moon, nor sun. The Lord sat in profound meditation. There was no hell, nor heaven, nor death, nor time ." (SGGS, p.1035) ³	Gregg Easterbrook " <i>Something</i> made an entire cosmos out of nothing." ⁸
b)	"The Lord Himself was in a state of nothingness from where He came into existence Himself. There was nothing of the universe at that time." ⁴ (SGGS: p.1035)	Francis Collins: "The universe came into being out of nothingness, approximately 14 billion years ago." ⁹
c)	With one word (bang) the Lord	Prof. Abdus Salaam: In the first moment of time, everything in the universe was compressed into an unbelievable dense form. So crushed was the matter that Physicists have to start the clock of time some few moments after zero because the law of

effected the worlds' expansion whereby millions of rivers (of galaxies) began to flow.(SGGS: p. 3)⁵

- d) He went on creating the entire nature creating nothingness from nothingness. (SGGS: p.1037)⁶
- e) The Lord started creating regions and the universes from unmanifest to manifest. (SGGS: p.1036).⁷

- 2 All the five elements were created from nothingness.¹¹ (SGGS: p. 1038) He further explained how the Lord created the universe from nothing very vividly on SGGS: pp.1037-1038) Everything is created out of Him alone. (SGGS :p.223)¹²

There is only One Lord who created the entire universe. (SGGS:p.1188)¹³ "Time originated from sun"¹⁴ (SGGS, p.357)

About creation of life Guru Nanak explained, "The physical body is created by the union of semen and blood and the life is created by the union of air, water

nature will not extend to that point of infinite temperature and mass.¹⁰

In 1929, Edwin Hubble made observation that wherever you look, distant galaxies are moving rapidly away from us. In other words the universe is expanding. This means that at earlier times objects would have been closer together. In fact it seemed that there was a time, about ten or twenty thousand million years ago, when they were all at exactly same place and when, therefore, the density of the universe was infinite. This discovery finally brought the question of the beginning of the universe into the realm of science. (Hawking : p.9)

- 2. A set of theories of the universe known as big bang theories satisfies the cosmological principle. Basically, these cosmologies say that once upon a time there was a great big bang that began the universe. From that moment onwards the universe expanded.¹⁶

Modern astronomical observation indicate that the universe came into existence roughly 10,000 million years ago, from a huge ball of fire tremendously hot and very dense indeed.¹⁷

Allen Sandage, The big bang can be understood only as a

and fire. He is doing this wonderful play by creating this world of materialism and love. (SGGS:p.1026)¹⁵

3 Unlimited Expanse of the Universe

- a) The spread of the universe is limitless. Man is not alone in the universe. No one knows how much is the spread of universe. (SGGS: p.9)²¹ No one knows his end. (SGGS: p.469)²² There are millions of regions and nether lands. These are beyond my calculations.²³ Billions are the airs, waters and fires. Billions are the countries and earths. Billion are the suns, moons and planets. (SGGS: p.176).²⁴ The Lord created the physical world in numrous varieties of colours. He goes on creating the universe the way His Greatness is. (SGGS: p.6)²⁵

“miracle.” “..the world is too complicated in all its parts and interconnections to be due to chance alone.”¹⁸

Hawking: Scientists have failed to describe the universe.¹⁹

Georges Lemaître “Existence began with the detonation of a “primordial atom” of infinite density.”²⁰

3. Unlimited Expanse of the Universe

French biologist Jacques Monod wrote, “The ancient covenant is in pieces: man knows at last that he is alone in the universe’s unfeeling immensity; out of which he emerged only by chance.”²⁶

Hubble’s observations suggested that there was a time, called the big bang, when the universe was infinitesimally small and infinitely dense. Under such conditions all the laws of science, and therefore all ability to predict the future, would break down. If there were events earlier than this time, then they could not affect what happens at the present time. Their existence can be ignored because it would have no observational consequence. One may say that time had a beginning in the big bang, in the sense that earlier time simply would not be defined. (Hawking : p. 10-11)

<p>4. The entire universe is on the move”²⁷ “In Lord’s fear is the sun and in Lord’s fear is the moon. They move myriads of miles without an end.” (SGGS: p. 464)²⁸</p> <p>5. We get the Truth about the True Lord only by getting tuned to Him. He can be seen in the three worlds (the entire universe) through the truth of true Lord’s Name.” (SGGS: p.56-57)³⁰</p> <p>6. Even if I have millions of tons of paper and have ink which never finishes writing moving with the velocity of winds; the writing which I continue reading and get attachment to the Lord; even then I cannot appraise Thee (The Lord).³²</p> <p>7. Binding together air, water and fire the Lord has created the body fortress. To it the Creator has fixed the nine doors. In the tenth gate is the abode of the Indiscernible Infinite Lord. (SGGS: p.1036)³³</p> <p>8. Only the one who can be high than the Lord; can understand Him.” (SGGS; p.24)⁸ The Lord watches all beings while the beings cannot see Him. This is the greatest wonder. (Japuji).³⁶</p>	<p>4. Galileo; The Earth rotates on its axis every day and revolves around the sun once a year..²⁹</p> <p>5. Einstein: “The most beautiful thing we can experience is the mysterious. It is the source of all true art and all science. He to whom this emotion is a stranger, who can no longer pause to wonder and stand rapt in awe, is as good as dead: his eyes are closed.”³¹</p> <p>6. Nobel Winner Steven Weinberg, “The more the universe seems comprehensible, the more it also seems pointless.” An expanding universe does not preclude a creator, but it does place limits on when he might have carried out his job! (Hawking: p. 9-10.)</p> <p>7. Hoyle declared, “The probability of life originating at random is so utterly miniscule as to make the random concept absurd.”³⁴</p> <p>8. Sigmund Freud “Man exalts the image into a deity and makes it into something contemporary and real. The effective strength of this mnemonic image and persistence of his need for protection jointly sustain his belief</p>
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	in God.” ³⁷
9. Through the true knowledge, meditation on True Lord's name and living a truthful life, the enlightenment of the truth occurs. (SGGS: p.223) ³⁸ The worldly attachments and detachments are the two sides. The faith is the deciding factor between the two. ³⁹	9. Pope, John Paul II declared that “Faith and reason are like two wings on which the human spirit rises to contemplation of the truth.” ⁴⁰ Einstein said, “Religion without science is blind; science without religion is lame.” ⁴¹
11. If God shows mercy then one remembers Him. His soul is softened and He remains absorbed in the Lord's love. He makes his soul one with the Supreme soul. His mind's duality is reabsorbed in the mind. By Guru's Grace the lord is obtained. (SGGS: p.661) ⁴²	11. Francis Collins, Director of the National Human Genome Research Institute, insists that “a lot of scientists really don't know what they are missing by not exploring their spiritual feelings.” ⁴³

The answers given by Guru Nanak are not just off the cuff given by a layman. They are born out of his deep knowledge and vast experience; both divine and worldly. They are empirically verifiable as can be seen from the observations made by various modern scientists. Some other important Questions about Universe and Nature as answered by Guru Nanak Dev are reproduced in Tables 3-4 below:

Question	Answer
1. What is the universe?	1. Lord's entire creation is the universe. It includes the eighty-four lacs of species all originated from God. ⁴⁴
2. Who has created the universe?	2. The True Lord is the creator of the universe. God is the Creator. ⁴⁵
3. Why did He create universe?	3. He created the universe to enjoy the game of his creativity. ⁴⁶

4. When did He create universe?	4. The Creator alone knows when He created it. No yogi or anyone else knows the day and time. ⁴⁷
5. What was before creation?	5. Nothingness. ⁴⁸
6. From where did He create the universe?	6. He created the universe from void. ⁴⁹
7. How did He start the creation?	7. He created the universe with one word. ⁵⁰
8. What is the stages and process of creation of the universe?	<p>8. Guru Nanak gives eight stages of creation of universe. These are Pre-Universe, Cosmic Haze, Manifestation, Initiation of Creation, Creation of Cosmic Bodies, Solar Systems and Earth, Creation of Atmosphere and Troposphere and Water Bodies, (<i>Arbad Narbad Dhundukara</i>, SGGS p.1035).⁵¹</p> <p>Process of Creation: God Energy→Air Water Fire Nature Universe Beings</p> <ol style="list-style-type: none"> 1. He first created Himself and gave Himself a Name.⁵² 2. He created the universe with one word.⁵³ 3,4,5. From void He created air and water.⁵⁴ He created air in which it placed the entire earth and tied the water and fire around.⁵⁵ 6. All parts of universe, the galaxies and the nether worlds have been created from void.⁵⁶ 7. In between air, water and

<p>9. For how long has the universe been created?</p> <p>10. How does the universe exist?</p>	<p>fire, the Lord established the earth to act as a place of worship for the being.⁵⁷</p> <p>8. God fashioned the world by creating human <i>maya</i> in various colours and kinds.⁵⁸</p> <p>9. Creating the bodies the Lord sends the souls and takes the soul ultimately.⁵⁹</p> <p>10. He himself establishes and de-establishes and makes men assume many forms.⁶⁰</p> <p>9. Only God knows when He created the universe.⁶¹</p> <p>10. The universe functions in a system as per Divine Order. Everyone is in His order; no one is out of the system. By His Order Maya is created and everyone is attached to <i>Maya</i>⁶² causing attractions with an urge to achieve. To achieve the beings toil hard and change the shape of things in turn. Change is continuous because desire never ends, it always expands unless controlled; desire leads to continuous toil and in turn causes continuous change. The perishable nature of goods causes a fear in a being of losing. In fear of losing he strives harder and so does act to create and recreate. His creation and recreation of something is the result of destruction of something else. This process of destruction and creation creates a cycle balancing the universe.⁶³</p> <p>11. Lord watches and controls the</p>
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11. Who controls the universe?	entire creation and takes care of His creation. ⁶⁴
12. How is the universe controlled?	12. The Lord has set a system of 'union and separation' ⁶⁵ through which he regulates the world's functioning ⁶⁶ i.e., He unites and separates; destroys and revives. ⁶⁷
13. What is the expanse of the universe?	13. There are many more worlds beyond this world ⁶⁸ and countless continents and underworlds. ⁶⁹ No one knows the exact expanse of the universe. ⁷⁰
14. What is the life of the universe?	14. The Lord keeps on creating and destroying. He alone knows how far this will continue. The expanse of the universe happened many times. ⁷¹

Table 4: Questions about the Nature:

Question	Answer
1. What is Nature?	1. The entire universe, the environment and their functioning in a system are all nature. ⁷² It is beyond a human being to describe the nature of the Lord. ⁷³
2. What is the power and extent of the nature?	2. The power and extent of nature are beyond the measuring capability of the human beings. By Lord's power is the entire creation. ⁷⁴ His limit cannot be known as the limit of the Nature cannot be known. ⁷⁵
3. Who has created the nature?	3. The Lord only created the Nature. ⁷⁶ God created the Nature as He thought fit and right what to do next. ⁷⁷

4. What all does the nature include?	4. God created nights, seasons, lunar-days, weekdays, wind, water, fire and nether lands. In the midst of these He established earth as a home for mediation. In it He placed living beings of different habits and kinds. ⁷⁸ All this is His nature.
5. How did He create the nature?	5. The Supreme Lord created the nature with one word. ⁷⁹
6. Why was the nature created?	6. He has established this wonderful show as a play for Himself. ⁸⁰
7. How is the nature changing regularly & systematically?	7. Having created the entire nature, He has set a continuous change system and continues destroying and creating nature. ⁸¹ He does everything as He wishes. ⁸²

During Guru Nanak's era scientific approach was then a neglected field in India and science was the casualty of orthodoxy. There was a need for general awakening of the people to take them off from the darkness of ignorance and to propagate the true path as envisioned by Guru Nanak.

The world then was not even aware of laws of gravitation, solar system, earth's rotation around the sun and the existence of countless stars and galaxies in the universe. It was not known then that the air was a creation from heat and water was created from air. It was the sun-rays which helped origination of nature.

Guru Nanak had not only a great vision but also a very scientific and analytic mind. Through his knowledge and analytical and scientific vision, he propounded certain Doctrines which were very new to the world. Most of these are still under study.

Guru Nanak undertook journeys to bring in a change and moved from place to place enlightening the people about the truth of life and ultimate reality. His approach to the study of universe was analytical,

systematic and scientific and his propagation of scientific truth was realistic and humane.

Through inquisition, experience, intuition and super-consciousness, Guru Nanak has answered the most difficult questions which the modern science has not been able to answer so far and is not likely to provide the answer if it does not change the methodology of inquiry. Guru Nanak's answers to the various questions, theories, concepts and doctrines are certainly going to be the guiding light for the future inquiries hence need the due attention of the scientific world at large.

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- 49 yv pjwv gkskb noG/ rgsj[ gorNh nkfJdk. (SGGS, M.1. p. 1036)
- 50 ehsk g; kT[ Jk' etkT[ (SGGS, M.1. p. 3)
- 51 nopd Bopd Xk[ekok a a a a a (SGGS, M.1. p. 1035-36)
- 52 nkgB? nkg[ ;kfiU nkgB? ofuU BkU.. (SGGS, M.1. p.463)
- 53 ehsk g; kT[ Jk' etkT[ (SGGS, M.1. p.3)
- 54 gTD[ gkDh ;B? s/ ;ki? . (SGGS, M.1. p.1037)
- 55 gTD TgkfJ Xoh ;G Xosh ib nrBh ek pX[ ehnk. . (SGGS, M.1. p.350)
- 56 yv pjwv gkskb noG/ rgsj[ gorNh nkfJdk. (SGGS, M.1. p.1036)
- 57 gtD[ gkDh nrBh gkskb. fs; ftu Ekfg oyh Xow; kb[ . (SGGS, M.1. p.34)
- 58 orh orh Gksh efo efo fiB;h wkfJnk fiB TgkJh. . (SGGS, M.1. p.9)

- 59 fi Bf; Ekfg i hnk eT[ Gl? fi Bf; Ekfg b? ikt? . (SGGS, M.1. p.1233)
- 60 nkg/ Ekfg T[Ek/ nkg/ Jb/ t/ eokt? (SGGS, M.1. p.1233)
- 61 ik eorsk f; omh e' ; ki? nkg? i kD? ; 'Jh. . (SGGS, M.1. p.4)
- 62 wkfJnk wfj ; rb ir[ SkfJnk. . (SGGS, M.1. p.1342)
- 63 Ykfj T[ ko/ j[efw ; wkt? . j[ew? tos? i' fs;[ Gkt? . (SGGS, M.1. p.414 )
- 64 nkg/ e[fofs efo efo d[? (SGGS, M.1. p.1037)
- 65 ; i'r[ fti'r[ d[fJ eko ubktfj (SGGS, M.1. p.6)
- 66 nkg/ iV ftSV/ eorsk nkg/ wkfo ihtkfJdk. (SGGS, M.1. p.1034)
- 67 ; i'r[ fti'r[ wb? g[ ehJ/. f; qfN T[bfJ d[? ; y dhJ/. (SGGS, M.1. p.1032)
- 68 Xosh j'b[ go? j'b[ j'b[ . (SGGS, M.1. p.3)
- 69 yv gskb n; y w? rDs B j'Jh. . (SGGS, M.1. p.1283)
- 70 efJ B i kD? sbk uhok. (SGGS, M.1, p.1034)
- 71 eJh pko g; foU gk; ko. ; dk ; dk fJel J[eko. . (SGGS, M.1. p.276)
- 72 BkBe ; u dksko[ f; Bkys[ e[fofs. (SGGS, M.1. p.141)
- 73 e[fofs etD[ ejk thuko[ (SGGS, M.1. p.4)
- 74 e[fofs gkskbh nkek; h e[fofs ; op nkeko[ (SGGS, M.1. p.464)
- 75 pfbj koh e[fofs tf; nk .. sbk ns[ B i kJh bfynk. . (SGGS, M.1. p.469)
- 76 nkg/ e[fofs eo/ ; kfi .. ; u[ nkfg fBpW/ oki[ olfi .. (SGGS, M.1. p. 1170)
- 77 T[sgli ub[ ehnk f; fo eos? fp; wkD[ ; pfd d[?kfJdk. . (SGGS, M.1. p.1037)
- 78 oksh o[sh fEsh tko. gtD gkDh nrBh gkskb ..  
fs;[ ftfu Xosh Ekfg oyh Xow; kb .. (SGGS, M.1. p. 7)
- 79 ehsk g; kT[ J[ e' etkT[ . (SGGS, M.1. p.3)
- 80 nkg/ e[fofs ; kfi e? nkg? eo? phuko[. . (SGGS, M.1. p.143)
- 81 nkg/ e[fofs efo efo d[? .. (SGGS, M.1. p. 1037)
- 82 nkgDh e[fofs nkg? i kD? nkg? eoD[ eofJ. . (SGGS, M.1. p.53)

